

Mr. Michael Baugh
Harman-Becker Automotive Systems
1201 South Ohio Street
Martinsville, Indiana 46151

Re: Registered Operation Status,
109-13738-00019

Dear Mr. Baugh:

The application from Harman-Becker Automotive Systems, received on December 29, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, Registrations, it has been determined that the following automotive speaker assembly plant operations, to be located at 1201 South Ohio Street, Martinsville, Indiana, is classified as registered:

- (a) One (1) spider production (polymeric coating) process with emissions exhausting to Stack I-1. This process consists of the following facilities:
 - (1) One (1) polymeric coating mixer unit with a maximum acetone-resin mixture rate of 6.75 pounds per hour;
 - (2) One (1) impregnation booth that utilizes a roll coating method to apply the polymeric solution to cloth at a maximum rate of ten (10) inches of cloth per minute and 300 square feet of cloth per hour; and
 - (3) One (1) electric dryer.
- (b) One (1) sub-assembly process B2 (Line 022) with a maximum production rate of 581 units per hour and exhausting to Stack 99. This process consists of the following facilities:
 - (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 0.56 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.15 pounds per hour; and
 - (2) One (1) soldering area.
- (c) One (1) sub-assembly process 041 with a maximum production rate of 643 units per hour and exhausting to Stack 20, with a maximum glue usage rate of 0.45 pounds per hour, total, applied by squeeze bottle or brush. This process consists of the following facilities:
 - (1) One (1) bonding area applying glues at a maximum rate of 0.28 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.19 pounds per hour; and
 - (2) One (1) final bonding area applying glues at a maximum rate of 0.28 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.19 pounds per hour.
- (d) Three (3) assembly lines, identified as 062, 063 and 064, with a maximum production rate of

720 units per hour and exhausting to Stack 99. These lines consist of the following facilities:

- (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 1.1 pounds per hour and utilizing cleaning solvents at a maximum rate of 0.74 pounds per hour;
 - (2) One (1) soldering area; and
 - (3) One (1) electric curing oven area.
- (e) Two (2) assembly lines, identified as 102 and 103, with a maximum production rate of 720 units per hour, consisting of:
- (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 1.02 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.37 pounds per hour and exhausting to Stacks 7 and 108;
 - (2) One (1) soldering area exhausting to Stacks 7 and 108; and
 - (3) One (1) electric curing oven area exhausting to Stacks 1 and 110.
- (f) One (1) finishing sub-assembly process E (Line 111) with a maximum production rate of 420 units per hour and exhausting to Stack 108. This process consists of the following facilities:
- (1) One (1) bonding area applying glues using a squeeze and brush at a maximum rate of 0.44 pounds per hour and utilizing cleaning solvents at a maximum rate of 0.86 pounds per hour;
 - (2) One (1) soldering area; and
 - (3) One (1) screw and crimp operation.
- (g) One (1) maintenance cost center, identified as 351, with a maximum cleaning solvent usage of 1.37 pounds per hour.
- (h) Three (3) injection molding facilities, with a maximum resin usage rate of 150 pounds per hour, total.
- (i) Eight (8) build cells, each equipped with three (3) soldering terminals and speaker assembly areas.
- (j) One (1) soil vapor extraction system consisting of the following:
- (1) One (1) air sparging, maximum air flow rate of 320 acfm, blower voltage 480 volts with a blower current at 297 amps.
 - (2) One (1) soil vapor extraction, maximum air flow rate of 540 acfm, blower voltage 460 volts with a blower current at 297 amps. Stack, identified as SVE-1, height of 30 feet with a diameter of 0.5 feet.

- (k) One (1) natural gas fired incinerator for heat cleaning and paint burn-off, capacity: 40 pounds per hour of paint from metal parts and 0.65 million British thermal units per hour.
- (l) Twenty-four (24) natural gas-fired space heaters with a combined capacity of 8.4 million British thermal units per hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Any change or modification which may increase the potential to emit a combination of HAPs or VOC to twenty five (25) tons per year or a single HAP to ten (10) tons per year from this source shall require approval from IDEM, OAQ prior to making the change.
3. Pursuant to 326 IAC 4-2-2 (Incinerators), the incinerator, rated at 40 pounds per hour shall:
 - (a) Consist of primary and secondary chambers or the equivalent;
 - (b) Be equipped with a primary burner unless burning wood products;
 - (c) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules);
 - (d) Be maintained properly as specified by the manufacturer and approved by IDEM;
 - (e) Be operated according to the manufacturer's recommendation and only burn waste approved by IDEM;
 - (f) Comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;
 - (g) Be operated so that emissions of hazardous materials including, but not limited to, viable pathogenic bacteria, dangerous chemical or gases, or noxious odors are prevented;
 - (h) Not create a nuisance or a fire hazard; and
 - (i) Not emit particulate matter (PM) in excess of five-tenths (0.5) pounds per one thousand (1,000) pounds of dry exhaust gas corrected to fifty percent (50%) excess air.

The operation of the incinerator shall be terminated immediately upon noncompliance with any of the above mentioned requirements.

4. Pursuant to 326 IAC 8-2-1(a)(4), any change or modification that increases the actual VOC emissions to fifteen (15) pounds per day or more from each product line, starting with the polymeric coating process and ending with a finished product, may make the source subject to the requirements of 326 IAC 8-2, Surface Coating Emission Limitations, and shall require prior IDEM, OAQ, approval.
5. The Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC emission requirements established in Condition 4.
 - (1) The amount and VOC content of each coating material and solvent used at each product line, starting with the polymeric coating process and ending with a finished product. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the dates of use;
 - (3) The cleanup solvent usage for each day;
 - (4) The total VOC usage for each day at each product line, starting with the polymeric coating process and ending with a finished product; and
 - (5) The weight of VOCs emitted for each day at each product line, starting with the polymeric coating process and ending with a finished product.

This registration for an existing source is a registration incorporating all previous approvals into a single approval for this source. The source may operate according to 326 IAC 2-5.5, Registrations.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief

Harman-Becker Automotive Systems
Martinsville, Indiana

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Registration 109-13738
Plt ID 109-00019

Permits Branch
Office of Air Quality

CAO/MES

cc: File - Morgan County
Morgan County Health Department
Air Compliance - Marc Goldman
Permit Tracking - Janet Mobley
Air Programs Section- Michele Boner

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Harman-Becker Automotive Systems
Address:	1201 South Ohio Street
City:	Martinsville
Authorized individual:	Michael Baugh
Phone #:	(765) 342-5551
Registration #: 109-13738-00019	

I hereby certify that Harman-Becker Automotive Systems is still in operation and is in compliance with the requirements of Registration 109-13738-00019.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Harman-Becker Automotive Systems
Source Location:	1201 South Ohio Street, Martinsville, Indiana 46151
County:	Morgan
SIC Code:	3651
Registration No.:	109-13738-00019
Permit Reviewer:	CarrieAnn Ortolani

The Office of Air Quality (OAQ) has reviewed an application from Harman-Becker Automotive Systems relating to the operation of an automotive speaker assembly plant.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices and emission units and pollution control equipment that did not require an approval:

- (a) One (1) spider production (polymeric coating) process with emissions exhausting to Stack I-1. This process consists of the following facilities:
 - (1) One (1) polymeric coating mixer unit with a maximum acetone-resin mixture rate of 6.75 pounds per hour;
 - (2) One (1) impregnation booth that utilizes a roll coating method to apply the polymeric solution to cloth at a maximum rate of ten (10) inches of cloth per minute and 300 square feet of cloth per hour; and
 - (3) One (1) electric dryer.
- (b) One (1) sub-assembly process B2 (Line 022) with a maximum production rate of 581 units per hour and exhausting to Stack 99. This process consists of the following facilities:
 - (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 0.56 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.15 pounds per hour; and
 - (2) One (1) soldering area.
- (c) One (1) sub-assembly process 041 with a maximum production rate of 643 units per hour and exhausting to Stack 20, with a maximum glue usage rate of 0.45 pounds per hour, total, applied by squeeze bottle or brush. This process consists of the following facilities:

SourceName
Location, Indiana
Permit Reviewer:MES

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- (1) One (1) bonding area applying glues at a maximum rate of 0.28 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.19 pounds per hour; and
 - (2) One (1) final bonding area applying glues at a maximum rate of 0.28 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.19 pounds per hour.
- (d) Three (3) assembly lines, identified as 062, 063 and 064, with a maximum production rate of 720 units per hour and exhausting to Stack 99. These lines consist of the following facilities:
 - (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 1.1 pounds per hour and utilizing cleaning solvents at a maximum rate of 0.74 pounds per hour;
 - (2) One (1) soldering area; and
 - (3) One (1) electric curing oven area.
- (e) Two (2) assembly lines, identified as 102 and 103, with a maximum production rate of 720 units per hour, consisting of:
 - (1) One (1) bonding area applying glues with squeeze bottle or brush at a maximum rate of 1.02 pounds per hour and utilizing cleaning solvents at a maximum rate of 1.37 pounds per hour and exhausting to Stacks 7 and 108;
 - (2) One (1) soldering area exhausting to Stacks 7 and 108; and
 - (3) One (1) electric curing oven area exhausting to Stacks 1 and 110.
- (f) One (1) finishing sub-assembly process E (Line 111) with a maximum production rate of 420 units per hour and exhausting to Stack 108. This process consists of the following facilities:
 - (1) One (1) bonding area applying glues using a squeeze and brush at a maximum rate of 0.44 pounds per hour and utilizing cleaning solvents at a maximum rate of 0.86 pounds per hour;
 - (2) One (1) soldering area; and
 - (3) One (1) screw and crimp operation.
- (g) One (1) maintenance cost center, identified as 351, with a maximum cleaning solvent usage of 1.37 pounds per hour.
- (h) Three (3) injection molding facilities, with a maximum resin usage rate of 150 pounds per hour, total.
- (i) Eight (8) build cells, each equipped with three (3) soldering terminals and speaker assembly areas.
- (j) One (1) soil vapor extraction system consisting of the following:

- (1) One (1) air sparging, maximum air flow rate of 320 acfm, blower voltage 480 volts with a blower current at 297 amps.
- (2) One (1) soil vapor extraction, maximum air flow rate of 540 acfm, blower voltage 460 volts with a blower current at 297 amps. Stack, identified as SVE-1, height of 30 feet with a diameter of 0.5 feet.
- (k) One (1) natural gas fired incinerator for heat cleaning and paint burn-off, capacity: 40 pounds per hour of paint from metal parts and 0.65 million British thermal units per hour.
- (l) Twenty-four (24) natural gas-fired space heaters with a combined capacity of 8.4 million British thermal units per hour.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities requiring an approval operating at this source during this review process.

New Emission Units and Pollution Control Equipment

There are no new facilities/units requiring approval during this review.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Exempt construction and operation status 109-00019, issued on June 21, 1991;
- (b) CP 109-3507-00019, issued on August 17, 1995;
- (c) Registration CP 109-5282-00019, issued on April 26, 1996; and
- (d) Registration CP 109-9716-00019, issued on August 17, 1998, which supersedes CP 109-3507-00019.

All conditions from previous approvals were incorporated into this permit except the following:

CP 109-3507-00019, issued on August 17, 1995

Condition: All conditions

Reason not incorporated: As stated in Registration CP 109-9716-00019, issued on August 17, 1998, that registration supersedes CP 109-3507-00019. Therefore, the requirements of CP 109-3507-00019, issued on August 17, 1995, are no longer applicable to this source.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
I	Spider Production	24.0	1.0	500	220
SVE-1	Soil vapor extraction	30.0	0.5	540	235
20	Sub-assembly 041	36.5	3.0	8,500	ambient
99	Sub-assembly B2 (Line 022) and Assembly lines 062, 063 and 064	40.0	3.0	8,000	ambient
7	Bonding and soldering at Assembly lines 102 and 103	25.0	2.0	3,000	ambient
1	Electric curing oven area at Assembly lines 102 and 103	24.0	1.0	500	180
108	Finishing sub-assembly process E (Line 111)	36.5	3.0	8,500	ambient
110	Electric curing oven area at Assembly lines 102 and 103	24.0	1.0	500	180

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 29, 2000, with additional information received on April 24, 2001.

Emission Calculations

See pages 1 through 7 of 7 of Appendix A of this document for detailed emissions calculations. There are no emissions calculations for the soldering operation. Soldering emissions are negligible.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any

physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.683
PM ₁₀	0.499
SO ₂	0.241
VOC	22.3
CO	1.19
NO _x	3.94
HAPs	Potential To Emit (tons/year)
Acrylic Acid	0.052
Bis(2 ethylhexyl) phthalate	0.481
Glycol Ether	0.313
Hexane	2.53
MEK	0.326
Methanol	0.342
MIBK	0.046
Toluene	5.65
Formaldehyde	0.482
Phenol	3.19
Benzene	0.00055
Dichlorobenzene	0.00004
Lead	0.00002
Cadmium	0.00004
Chromium	0.00005
Manganese	0.00001
Nickel	0.00008
Ethyl benzene	0.00063
Xylenes	0.00127
Trichloroethylene	0.00037

HAPs	Potential To Emit (tons/year)
Vinyl Chloride	0.00037
trans 1,2 dichloroethylene	0.00008
Chloroform	0.00005
Carbon Tetrachloride	0.00007
Tetrachloroethylene	0.00007
1,1 dichloroethylene	0.00008
Methylene chloride	0.00036
1,1 dichloroethane	0.00017
cis-1,2 dichloroethylene	0.00091
1,1,1 trichloroethane	0.00048
TOTAL	13.3

- (a) The potential to emit (as defined in 326 IAC 2-5.1-2) of VOC is less than twenty-five (25) tons per year and greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5, Registration.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7, Part 70.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs
Total Emissions	0.683	0.499	0.241	less than 25	1.19	3.94	less than 10 individual less than 25 total

County Attainment Status

The source is located in Morgan County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Morgan County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR Part 52.21.
- (b) Morgan County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.683
PM ₁₀	0.499
SO ₂	0.241
VOC	22.3
CO	1.19
NO _x	3.94

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of two hundred-fifty (250) tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions are the potential to emit of the entire source.
- (c) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR Part 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance

Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than one hundred (100) tons per year,
- (b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and
- (c) any combination of HAPS is less than 25 tons per year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 326 IAC 20, 40 CFR Part 61 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Morgan County and the potentials to emit VOC, PM₁₀, SO₂, NO_x and CO are less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR Part 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1-1 (New Source Toxics Control)

The potential to emit each individual hazardous air pollutant (HAP) is less than ten (10) tons per year and the potential to emit any combination of HAPs is less than twenty-five (25) tons per year from this source. Therefore, the requirements of 326 IAC 2-4.1-1 are not applicable to any facility at this source.

326 IAC 4-2-2 (Incinerators)

Pursuant to 326 IAC 4-2-2, the incinerator, rated at 40 pounds per hour shall:

- (a) Consist of primary and secondary chambers or the equivalent;
- (b) Be equipped with a primary burner unless burning wood products;
- (c) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules);
- (d) Be maintained properly as specified by the manufacturer and approved by IDEM;
- (e) Be operated according to the manufacturer's recommendation and only burn waste approved by IDEM;
- (f) Comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;
- (g) Be operated so that emissions of hazardous materials including, but not limited to, viable pathogenic bacteria, dangerous chemical or gases, or noxious odors are prevented;
- (h) Not create a nuisance or a fire hazard; and
- (i) Not emit particulate matter (PM) in excess of five-tenths (0.5) pounds per one thousand (1,000) pounds of dry exhaust gas corrected to fifty percent (50%) excess air.

The operation of the incinerator shall be terminated immediately upon noncompliance with any of the above mentioned requirements.

The incinerator has a manufacturer's guaranteed maximum exhaust rate of 0.023 pounds of PM per 1,000 pounds of dry exhaust gas, corrected to fifty percent (50%) excess air. Therefore, the incinerator is in compliance with this rule.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The potential to emit VOC at each facility at this source is less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

326 IAC 8-2 (Surface Coating Emission Limitations)

All facilities at this source were constructed after July 1, 1990 in Morgan County. Therefore, the requirements of 326 IAC 8-2-9, Miscellaneous Metal Coating, can be applicable to all metal coating facilities, and 326 IAC 8-2-11, Fabric and Vinyl Coating, can be applicable to all fabric coating operations. Part of each production line can engage in metal and fabric coating. Pursuant to Registration CP 109-9716-00019, issued on August 17, 1998, the actual VOC emissions were limited to less than fifteen (15) pounds per day from each product line, starting with the polymeric coating process and ending with a finished product. Therefore, pursuant to 326 IAC 8-2-1(a)(4), the require-

ments of 326 IAC 8-2 are not applicable. Since this source is currently in compliance with that limit, the actual VOC emissions from each product line are less than fifteen (15) pounds per day and the requirements of 326 IAC 8-2 are not applicable.

326 IAC 8-6 (Organic Solvent Emission Limitations)

Each facility at this source was constructed after January 1, 1980. Therefore, pursuant to 326 IAC 8-6-1(2), the requirements of 326 IAC 8-6 are not applicable to any facility at this source.

Conclusion

The operation of this automotive speaker assembly plant shall be subject to the conditions of the attached proposed Registration 109-13738-00019.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Page 1 of 7 TSD App A

Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Registration: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Otolani
Date: December 29, 2000

Material	Density (lbs/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Material Usage (lbs/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC (pounds per hour)	Potential VOC (pounds per day)	Potential VOC (tons per year)	Particulate Potential (tons/yr)	lbs VOC/gal solids	Transfer Efficiency
Adhesive Application and Cleaning														
Assembly 062, 063, 064														
Dymax 20049 methacrylic adhesive	9.01	0.50%	0.0%	0.5%	0.0%	0.06000	0.05	0.05	0.000	0.01	0.00	0.00	n/a	100%
Dymax 29065 activator solution	8.18	0.50%	0.0%	0.5%	0.0%	0.02000	0.04	0.04	0.000	0.00	0.00	0.00	n/a	100%
Henkel Sicomet 5019, 5144 c.a. adhesive	8.68	0.20%	0.0%	0.2%	0.0%	0.08000	0.02	0.02	0.000	0.00	0.00	0.00	n/a	100%
Henkel Fastac H accelerator	6.01	80.00%	0.0%	80.0%	0.0%	0.12000	4.81	4.81	0.096	2.30	0.42	0.00	n/a	100%
Moyen NB-4018-M cement	7.82	76.00%	0.0%	76.0%	0.0%	0.15000	5.94	5.94	0.114	2.74	0.50	0.00	n/a	100%
Moyen SP-247 cement	7.00	51.00%	0.0%	51.0%	0.0%	0.12000	3.57	3.57	0.061	1.47	0.27	0.00	n/a	100%
Moyen SP-577-H cement	6.24	68.00%	0.0%	68.0%	0.0%	0.10000	4.24	4.24	0.068	1.63	0.30	0.00	n/a	100%
Moyen RS-3005-X2 cement (not to metal)	7.51	58.00%	0.0%	58.0%	0.0%	0.13000	4.36	4.36	0.075	1.81	0.33	0.00	n/a	100%
Moyen RS-3164 cement	7.51	69.00%	0.0%	69.0%	0.0%	0.32000	5.18	5.18	0.221	5.30	0.97	0.00	n/a	100%
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.09000	7.26	7.26	0.090	2.16	0.39	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	0.55000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%
Sub-assembly 041														
Henkel Sicomet 5019, 5144 c.a. adhesive	8.68	0.20%	0.0%	0.2%	0.0%	0.01000	0.02	0.02	0.000	0.00	0.00	0.00	n/a	100%
Henkel Fastac H accelerator	6.01	80.00%	0.0%	80.0%	0.0%	0.08000	4.81	4.81	0.064	1.54	0.28	0.00	n/a	100%
Moyen NB-4018-M cement	7.82	76.00%	0.0%	76.0%	0.0%	0.22000	5.94	5.94	0.167	4.01	0.73	0.00	n/a	100%
Moyen RS-3005-X2 cement (not to metal)	7.51	58.00%	0.0%	58.0%	0.0%	0.13000	4.36	4.36	0.075	1.81	0.33	0.00	n/a	100%
Moyen SP-577-H cement	6.24	68.00%	0.0%	68.0%	0.0%	0.01000	4.24	4.24	0.007	0.16	0.03	0.00	n/a	100%
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.09000	7.26	7.26	0.090	2.16	0.39	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	1.00000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%
Assembly 102 and 103														
Moyen VS-464 dampner	8.28	44.00%	0.0%	44.0%	0.0%	0.19000	3.64	3.64	0.084	2.01	0.37	0.00	n/a	100%
Dymax 20049 methacrylic adhesive	9.01	0.50%	0.0%	0.5%	0.0%	0.06000	0.05	0.05	0.000	0.01	0.00	0.00	n/a	100%
Dymax 29065 activator solution	8.18	0.50%	0.0%	0.5%	0.0%	0.02000	0.04	0.04	0.000	0.00	0.00	0.00	n/a	100%
Henkel Sicomet 5019, 5144 c.a. adhesive	8.68	0.20%	0.0%	0.2%	0.0%	0.08000	0.02	0.02	0.000	0.00	0.00	0.00	n/a	100%
Henkel Fastac H accelerator	6.01	80.00%	0.0%	80.0%	0.0%	0.07000	4.81	4.81	0.056	1.34	0.25	0.00	n/a	100%
Moyen NB-4018-M cement	7.82	76.00%	0.0%	76.0%	0.0%	0.25000	5.94	5.94	0.190	4.56	0.83	0.00	n/a	100%
Moyen SP-577-H cement	6.24	68.00%	0.0%	68.0%	0.0%	0.10000	4.24	4.24	0.068	1.63	0.30	0.00	n/a	100%
Moyen SP-865 cement	7.21	45.00%	0.0%	45.0%	0.0%	0.12000	3.24	3.24	0.054	1.30	0.24	0.00	n/a	100%
Moyen RS-3005-X2 cement (not to metal)	7.51	58.00%	0.0%	58.0%	0.0%	0.27000	4.36	4.36	0.157	3.76	0.69	0.00	n/a	100%
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.17000	7.26	7.26	0.170	4.08	0.74	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	1.10000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%
Finishing Sub-assembly 111														
Henkel Sicomet 5019, 5144 c.a. adhesive	8.68	0.20%	0.0%	0.2%	0.0%	0.01000	0.02	0.02	0.000	0.00	0.00	0.00	n/a	100%
Henkel Fastac H accelerator	6.01	80.00%	0.0%	80.0%	0.0%	0.06000	4.81	4.81	0.048	1.15	0.21	0.00	n/a	100%
Moyen SP-577-H cement	6.24	68.00%	0.0%	68.0%	0.0%	0.06000	4.24	4.24	0.041	0.98	0.18	0.00	n/a	100%
Moyen RS-3164 cement	7.51	69.00%	0.0%	69.0%	0.0%	0.37000	5.18	5.18	0.255	6.13	1.12	0.00	n/a	100%
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.10000	7.26	7.26	0.100	2.40	0.44	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	0.66000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%
Sub-assembly B2 Line 022														
Henkel Sicomet 5019, 5144 c.a. adhesive	8.68	0.20%	0.0%	0.2%	0.0%	0.06000	0.02	0.02	0.000	0.00	0.00	0.00	n/a	100%
Henkel Fastac H accelerator	6.01	80.00%	0.0%	80.0%	0.0%	0.07000	4.81	4.81	0.056	1.34	0.25	0.00	n/a	100%
Moyen VS-6020 cement	8.52	33.00%	0.0%	33.0%	0.0%	0.05000	2.81	2.81	0.017	0.40	0.07	0.00	n/a	100%
Dymax 20049 methacrylic adhesive	9.01	0.50%	0.0%	0.5%	0.0%	0.05000	0.05	0.05	0.000	0.01	0.00	0.00	n/a	100%
Dymax 29065 activator solution	8.18	0.50%	0.0%	0.5%	0.0%	0.02000	0.04	0.04	0.000	0.00	0.00	0.00	n/a	100%
Moyen RS-3080-A cement	7.01	63.00%	0.0%	63.0%	0.0%	0.39000	4.42	4.42	0.246	5.90	1.08	0.00	n/a	100%
Moyen RS-3164 cement	7.51	69.00%	0.0%	69.0%	0.0%	0.01000	5.18	5.18	0.007	0.17	0.03	0.00	n/a	100%
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.14000	7.26	7.26	0.140	3.36	0.61	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	0.91000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%
Maintenance Cost Center 351														
denatured alcohol (ethanol)	6.62	100.00%	0.0%	100.0%	0.0%	0.10000	6.62	6.62	0.100	2.40	0.44	0.00	n/a	100%
toluene	7.26	100.00%	0.0%	100.0%	0.0%	0.17000	7.26	7.26	0.170	4.08	0.74	0.00	n/a	100%
acetone	6.59	0.00%	0.0%	0.0%	0.0%	1.10000	0.00	0.00	0.000	0.00	0.00	0.00	n/a	100%

State Potential Emissions

Add worst case coating to all solvents

PM
Control Efficiency
Uncontrolled
Controlled

0.00%

3.59
3.59

86.1
86.1

15.7
15.7

0.00
0.00

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lbs/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lbs/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of material per hour (lbs/hr) * Weight % Organics
Potential VOC Pounds per Day = Pounds of material per hour (lbs/hr) * Weight % Organics * (24 hr/day)
Potential VOC Tons per Year = Pounds of material per hour (lbs/hr) * Weight % Organics * (8760 hrs/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = material (lbs/hr) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Appendix A: Emissions Calculations Impregnator and Injection Molding

Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Registration: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Ortolani
Date: December 29, 2000

Emissions Calculations

Material	Density (lb/gal)	Weight % VOC excluding water	Gallons per hour	Pounds VOC per hour	Pounds VOC per day	Tons of VOC per Year	PM tons per year	Flash Off Factor (%)	Transfer Efficiency
Spider Production (Impregnator & Mixer)									
SL-594 Resin	9.55	19.0%	0.2930	0.53	12.76	2.33	0.00	100.00%	100.00%
Acetone	6.59	0.0%	0.6000	0.00	0.00	0.00	0.00	100.00%	100.00%
Injection Molding									
SL-594 Resin	9.55	19.0%	15.7000	0.85	20.51	3.74	0.00	3.00%	100.00%
Potential Before Controls				1.39	33.3	6.07	0.00		
Potential After Controls				1.39	33.3	6.07	0.00		

METHODOLOGY

Potential VOC Pounds per Hour = Density (lb/gal) * Gal of Material (gal/hr) * Weight Percent Volatile * Flash Off Factor

Potential VOC Pounds per Day = Density (lb/gal) * Gal of Material (gal/hr) * (24 hrs / 1 day) * Weight Percent Volatile * Flash Off Factor

Potential VOC Tons per Year = Density (lb/gal) * Gal of Material (gal/hr) * (8760 hr/yr) * (1 ton / 2000 lbs) * Weight Percent Volatile * Flash Off Factor

Particulate Potential Tons per Year = (gal/hr) * (lbs/gal) * (1 - Weight % Volatiles) * (1 - Transfer efficiency) * (8760 hr/yr) * (1 ton / 2000 lbs)

Flash Off Factor (%) for Injection Molding is from Table 4.4-2 of AP-42

Reviewer: CarrieAnn Ortolani
Date: December 29, 2000

0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Individual Total		0.052	0.481	0.313	2.46	0.236	0.342	0.046	5.65
Overall Total		9.58							

$$\text{HAPS emission rate (tons/yr)} = \text{Material Usage (lb/hr)} * \text{Weight \% HAP} * 8760 \text{ hrs/yr} * 1 \text{ ton}/2000 \text{ lbs}$$

Individual Total	0.479	3.19
Overall Total	3.67	

$$\text{HAPS emission rate (tons/yr)} = \text{Density (lbs/gal)} * \text{Gal of Material (gal/hr)} * \text{Weight \% HAP} * 8760 \text{ hrs/yr} * 1 \text{ ton}/2000 \text{ lbs}$$

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Space Heaters**

Page 4 of 7 TSD App A

**Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Registration: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Ortolani
Date: December 29, 2000**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

8.40

73.58

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.070	0.280	0.022	3.68	0.202	3.09

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 5 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Space Heaters
HAPs Emissions**

Page 5 of 7 TSD App A

**Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Part 70: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Ortolani
Date: December 29, 2000**

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	7.73E-05	4.42E-05	2.76E-03	6.62E-02	1.25E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	Total HAPs
Potential Emission in tons/yr	1.84E-05	4.05E-05	5.15E-05	1.40E-05	7.73E-05	0.069

Methodology is the same as page 4.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emission Calculations Incinerator

Page 6 of 7 TSD App A

Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Registration: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Ortolani
Date: December 29, 2000

THROUGHPUT
lbs/hr
40

THROUGHPUT
 tons/yr
 175.2

Emission Factor in lb/ton	POLLUTANT				
	PM 7.0	SO2 2.5	CO 10.0	VOC 3.0	NOX 3.0
Potential Emissions in ton/yr	0.613	0.219	0.876	0.263	0.263

Methodology

Emission factors are from AP 42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers

Throughput (lb/hr) * 8760 hr/yr * ton/2000 lb = throughput (ton/yr)

**Appendix A: Emissions Calculations
VOC and HAPs
From Soil Remediation**

Company Name: Harman-Becker Automotive Systems
Address City IN Zip: 1201 South Ohio Street, Martinsville, Indiana 46151
Registration: 109-13738
Plt ID: 109-00019
Reviewer: CarrieAnn Ortolani
Date: December 29, 2000

Pollutant	Molecular Weight	Maximum Concentration (ppm vol)	Air Flow Rate (cub. ft./min)	PTE (lbs/hr)	PTE (tons/yr)
Benzene	78.12	0.07	125	0.00011	0.00047
ethyl benzene	106.17	0.07	125	0.00014	0.00063
Xylenes	106.17	0.14	125	0.00029	0.00127
Trichloroethylene	131.39	0.033	125	0.00008	0.00037
Toluene	92.13	0.07	125	0.00013	0.00055
MEK	72.12	0.07	125	0.00010	0.00043
Hexane	86.18	0.07	125	0.00012	0.00051
Vinyl Chloride	62.50	0.07	125	0.00009	0.00037
trans 1,2 dichloroethylene	96.94	0.01	125	0.00002	0.00008
Chloroform	119.38	0.005	125	0.00001	0.00005
Carbon Tetrachloride	153.82	0.005	125	0.00001	0.00007
Tetrachloroethylene	165.83	0.775	125	0.00250	0.01096
1,1 dichloroethylene	96.94	0.01	125	0.00002	0.00008
Methylene chloride	84.93	0.05	125	0.00008	0.00036
1,1 dichloroethane	98.96	0.02	125	0.00004	0.00017
cis-1,2 dichloroethylene	96.94	0.11	125	0.00021	0.00091
1,1,1 trichloroethane	133.41	0.042	125	0.00011	0.00048
VOC totals:				0.004	0.018
HAP totals:				0.004	0.018

Methodology

Potential to emit (PTE) (lbs/hr) = Maximum concentration (ppm by volume) x (Molecular weight/ 385.1 x 10⁶) x Air flow rate (cub. ft./min) x 60 min/hou
 Potential to emit (PTE) (tons/yr) = Potential to emit (lbs/hr) x 8,760 hrs/yr / 2,000 lbs/ton